

PRODUCTION OF SEMICONDUCTOR THIN FILM

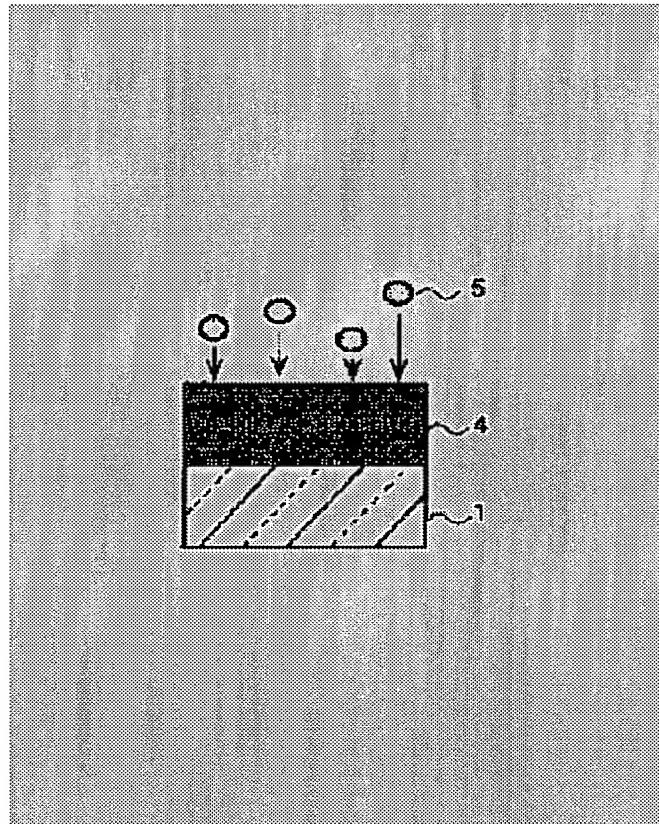
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- international: H01L31/04; C23C14/06; H01L21/203
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Abstract of JP9213977

PROBLEM TO BE SOLVED: To provide a production method by which the distribution of Vla-group elements Se and S in the depthwise direction of a CuIn_xSe₂ film and a Cu(In, Ga) (Se, S)₂ film constituting the optical absorption layer of a solar cell is controlled and any change is given to the forbidden band width and to provide a solar cell by which high energy conversion efficiency can be obtained by using the CuIn_xSe₂ film and Cu(In, Ga) (Se, S)₂ film which are formed by this method.

SOLUTION: A CuInSe₂ film or Cu(In, Ga)Se₂ film 4 is formed on a substrate covered with a metallic film such as an Mo film, etc., for rear electrode, and atoms or molecules of In and S or compound molecule 5 of In-S is supplied to the surface of the film 4 so as to allow it to react therewith. As a result, the concentration of S decreases gradually from the surface of the film 4 to the depthwise direction thereof, and on the contrary, the concentration of Se increases gradually from the surface of the film 4 to the depthwise direction thereof. Thus, a CuIn_xSe₂ and a Cu(In, Ga) (Se, S)₂ having such a distribution of concentration can be produced.



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